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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,192	07/24/2001	Mukta G. Farooq	FIS920010111US1	5681

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EXAMINER

EDMONDSON, LYNNE RENEE

ART UNIT

PAPER NUMBER

1725

DATE MAILED: 05/19/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/912,192

Applicant(s)

FAROOQ ET AL.

Examiner

Lynne Edmondson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 and 17 is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 July 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 8-13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki (JPN 2000-151093 A).

Suzuki teaches a method and apparatus for separating soldered components with a cutting tool (5) wherein the assembly is held and the solder has a thickness, a cutting blade (band) edge or wire edge (claims 3 and 4) having a thickness less than the thickness of the solder (figures 1 and 2) is heated, forced against the connection and advanced transverse the solder connections thus severing the connection row by row. This process is repeated as necessary. A vacuum (suction mechanism) is employed to remove the cut solder (claim 7). The component removed by this process can be any component including but not limited to a semiconductor, chip or board and the component assembly can be separated by any other means and still maintain the same structure for reuse. See also Suzuki claims 1-7 and machine translation.

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3. Claims 1, 4, 6, 8, 11, 13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Downing et al. (USPN 5458281).

Downing teaches a method and apparatus for separating soldered components with a cutting tool (23) wherein the assembly is held and the solder has a thickness, a cutting blade (23) edge (col 8 lines 5-10) having a thickness less than the thickness of the solder (figure 1) is heated, forced against the connection and advanced transverse the solder connections thus severing the connection row by row (figure 1 and col 7 lines 47-55). The component removed by this process can be any component including but not limited to a semiconductor, chip or board and the component assembly can be separated by any other means and still maintain the same structure for reuse.

4. Claims 1-3, 8-10 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Lyke (USPN 6539618 B1).

Lyke teaches a method and apparatus for separating soldered components with a cutting tool wherein the assembly is held and the solder has a thickness, a cutting wire having a thickness less than the thickness of the solder (figures 5a-5d) is heated, forced against the connection and advanced transverse the solder connections thus severing the connection row by row (col 1 lines 13-16, col 2 lines 33-44 and col 3 lines 10-45). The component removed by this process can be any component including but not limited to a semiconductor, chip or board and the component assembly can be separated by any other means and still maintain the same structure for reuse. See also Lyke claims 1 and 2.

***Response to Arguments***

5. Applicant's arguments with respect to claims 1-6, 8-13 and 15 have been considered but are moot in view of the new ground(s) of rejection.

***Allowable Subject Matter***

6. Claims 16 and 17 are allowed.

The following is an examiner's statement of reasons for allowance: Removal of soldered components with heated cutting elements is well known in the art. See Bryant (USPN 5938882) and Muramatsu (USPN 5427641). However these cutting elements are typically wires or blades. There is no disclosure of a solder cutting element comprising a water jet. Although water jets are well known cutting tools they are not generally used for soldering or electronics processing as they tend to generate a lot of debris in the cutting process. The closest prior art teaching a water jet for cutting does not teach a separating step or separating means. See Lymn et al. (USPN 6440215 B1) and Jampathom et al. (USPN 4846032).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Spigarelli et al. (USPN 5220147), Hyun (USPN 4896019), Hembree (USPN 6267650 B1, thin desoldering blade), Oglesby et al. (USPN 4785793, thin desoldering blade), Michel (USPN3903581, thin blade, vacuum) and Waller et al. (USPN 5229575).

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (703)

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306-5699. The examiner can normally be reached on M-F from 7-4 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (703) 308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-7115 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

Lynne Edmondson  
Examiner  
Art Unit 1725

LRE  
May 7, 2003

  
**TOM DUNN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 1700**